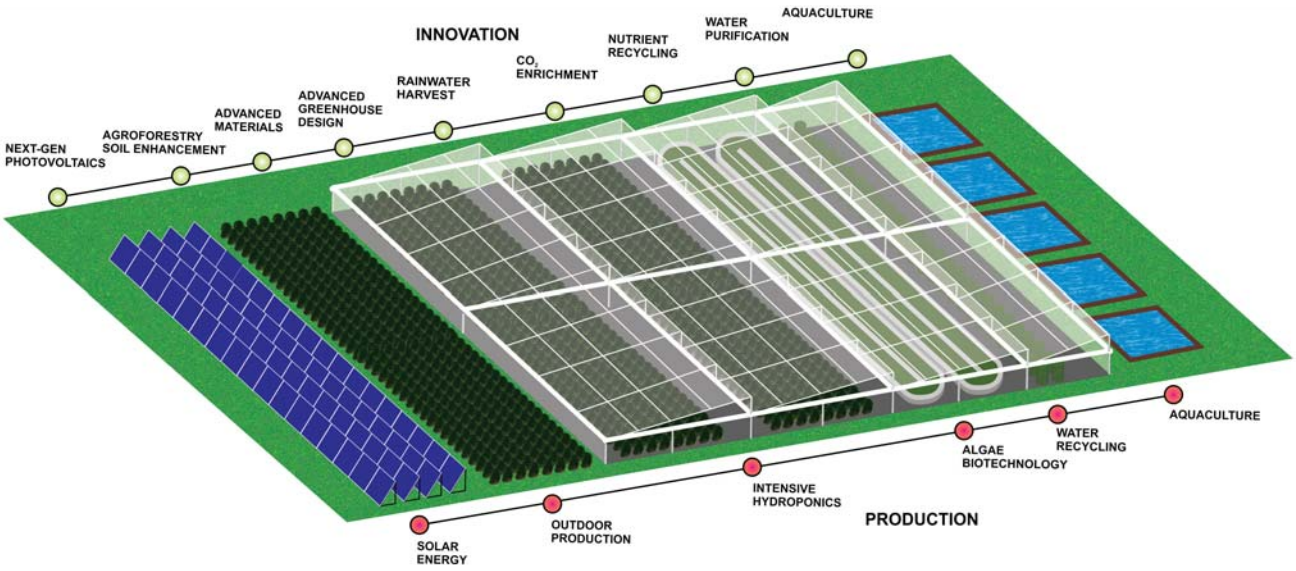
Integrated Bioeconomy Project

Advancing the bioeconomy through system integration and innovation

Centre for Solar Biotechnology

The University Of Queensland AUSTRALIA | IMB
Institute for Molecular Bioscience



The initiative

IBP Systems build upon the already profitable protected cropping industry which has reported investment returns of over 20% return on investment (Protected Cropping Australia 2016).

Top: *Advanced greenhouse.*
Middle: *Fresh, high quality produce.*
Bottom: *High value neutraceuticals from algae grown using nutrient-rich recycled IBP water.*

VISION

The vast global plant based 'bio-economy' provides us with a rapidly expanding range of foods, fuels and bio-products.

The Integrated Bioeconomy Project (IBP) is focused on the integration of advanced technologies to deliver the *controlled biosphere*, a protected cropping system that can produce 10 times more high quality food, with 10 times less water than conventional field production.

Global food demand is forecast to increase by 2% per year to 2050 due to our expanding population and the improvement in our standard of living. This ensures a rapidly expanding market, the supply of which will increasingly be impacted by climate variability as well as access to fresh water and nutrients.

The value proposition of the Integrated Bioeconomy Project is that it will deliver an advanced integrated production system with broad reaching benefits. It consists of a high-tech protected cropping system (*controlled biosphere*) able to produce up to 10 times more food than field production with 10 times less water. This can also be integrated into, and enhance, conventional field production.

The project is guided by thorough economic and life cycle analysis to select and integrate the best of a range of advanced greenhouse technologies, thin film photovoltaic and heat exchange systems, crop and algae production systems, CO_2 enrichment technologies, soil enhancers, nutrient recycling, water purification capability and biological control methods. These provide optimised production conditions in terms of temperature, humidity, CO_2, light, nutrients, pest and disease control.

Our strategy will allow the conversion of abundant natural resources – sunlight, CO_2, degraded land and low quality water – into high value products such as fresh nutritious food, algal products (e.g. nutraceuticals), clean energy and clean water.

This project taps into the growing horticulture and clean food markets, advancing toward more efficient, profitable and sustainable closed loop systems.

For more information, please contact us.
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